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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,983	03/08/2002	Basanth Jagannathan	BUR920020020US1	2595

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IBM MICROELECTRONICS
INTELLECTUAL PROPERTY LAW
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EXAMINER

TRAN, MINH LOAN

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 07/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. _____

09/683,983

Applicant(s) _____

JAGANNATHAN ET AL.

Examiner

Minhloan T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 13-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-12 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1, 2, 4-12, 17-20 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the subject matter of all claims 1-20 is sufficiently related that a thorough search for the subject matter of either group of claims would encompass a search for the subject matter of the remaining claims. This is not found persuasive because referring to the restriction requirement set forth in the Office Action paper no.5, it clearly shows that the alternative method proposed by the examiner would be distinct from the process claimed. Additionally, the search is not coextensive as evidenced by the different fields of search for the process and product as cited in the previous restriction requirement.

The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

2. The information disclosure statement filed 03/22/2002 has been considered.

Oath/Declaration

3. The oath or declaration filed on 03/08/2002 and 04/23/2002 is acceptable.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 1, 2, 4-12 and 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, lines 1 and 2, "a peak Ge concentration of at least approximately 20%" is unclear as to whether it is being referred to the peak Ge concentration of at least approximately 20% with respect to the total concentration of Si and Ge in the SiGe layer;

line 2, "a boron-doped base region formed **therein**" is unclear as to whether it is being referred to the boron-doped base region is formed in the SiGe layer.

In claim 2, lines 1 and 2, "a peak Ge concentration of at least approximately 20%" is unclear as to whether it is being referred to the peak Ge concentration of at least approximately 20% with respect to the total concentration of Si and Ge in the SiGe layer;

line 2, , "a boron-doped base region formed **therein**" is unclear as to whether it is being referred to the boron-doped base region is formed in the SiGe layer.

In claim 17, line 5, "a Ge concentration of at least approximately 20%" is unclear as to whether it is being referred to the Ge concentration of at least approximately 20% with respect to the total concentration of Si and Ge in the SiGe layer.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-10 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Lanzerotti et al. (Suppression of Boron Outdiffusion in SiGe HBTs by Carbon Incorporation, IEDM 1996, pages 249 – 252).

Lanzerotti et al. discloses a SiGe HBT comprising an SiGe layer, a base region and a boron diffusion-limiting region, in which the boron diffusion-limiting region extends substantially throughout the base region and has a dopant (carbon dopant) less than that of the base region (see figures 2a and 7a); wherein both the base region and the boron diffusion-limiting region are spaced within a given distance of a portion of the SiGe layer having a Ge concentration of at least 20% so as to optimize both the performance and yield of the SiGe HBT. Note figures 1a, 2a, 7a of Lanzerotti et al.

Allowable Subject Matter

6. Claims 11, 12, 18-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minhloan T. Tran whose telephone number is (703) 308-4919. The examiner can normally be reached on Monday-Friday 9:00 AM-5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mlt
06/2003


Minhloan T. Tran
Primary Examiner
Art Unit 2826